cases, especially those where the compensation is insufficient, the action of the heart is interfered with, and great care has to be used in giving sulphonal to such patients.

In doses of from three grains and a half to seven grains it may be safely used to prevent excessive sweating.—*Lancet*, March 15, 1890.

AGARICINIC ACID.

Agaricin has for some time been employed in the night-sweats of phthisis. It is now stated that PROFESSOR KAHLER, of Prague, and some other observers, have found a new preparation of this substance—agaricinic acid—very efficacious for the same purpose. A dose of from one-third to three-quarters of a grain was well borne and produced no unpleasant effects, except that the largest of these quantities sometimes caused a slight and transient nausea. As a rule, a pill containing one-seventh of a grain is sufficient. It should be given about six o'clock in the evening.—*Lancet*, April 12, 1890.

MEDICINE.

UNDER THE CHARGE OF

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ON INFLUENZA.

EICHHORST (*Correspondenzblatt für schweiz. Aertze*, March 1, 1890, 137), in reviewing the recent epidemic of influenza in Switzerland, refers to the fact that the earliest epidemic of it seen there occurred in 1557, and the latest before the present one in 1864.

As regards the actual number of cases, the statistical reports are manifestly incorrect and far too low. He estimates that at least 40,000 cases occurred in Zurich. The source of the epidemic as regards Zurich cannot be determined, nor can the manner of its spread over the city. He is firmly of the conviction that it is often directly transmissible from person to person, and cites several instances, including his own case and that of others of his family, in proof of this. He admits, however, that cases occur, and he has repeatedly seen such, which seem to prove the opposite of this. Whatever the *materies morbi* may be, it is certainly a poison of astonishing power. As to whether the infection is at first local or through the blood, he has seen instances which seem to show that it at least can be in the latter way.

Regarding the symptoms, he follows as the best Landouzy's division of influenza into a cephalic, a thoracic, and an abdominal form. According to the author's experience, the especial characteristic of the last epidemic was the evidence of severe involvement of the nervous system; and he reports in detail several cases illustrative of this and of the severity of the nervous sequelæ; such as symmetrical gangrene, localized paralyses, mania, aphasia. Eichhorst further calls attention to the fact that, although most cases are accompanied by fever, yet afebrile cases frequently occur and that these are particularly liable to exhibit severe nervous symptoms.

Individual peculiarities are particularly marked in grippe, and members of the same family often exhibit entirely different course and symptoms. Three autopsies were made on the fatal cases in his clinic. In one there were two small pneumonic foci, the size of a plum, in the left lung, and besides these, nothing except that the Malpighian tufts were excessively hyperæmic. A second case exhibited a bilateral fibrinous inflammation of the lungs, and a third case suffered from enormous *adipositas*. Eichhorst knows of no specifics for the treatment of the disease. Quinine was without effect in most of his cases. Antipyrine or phenacetin or salicylic acid was found useful for the troublesome nervous symptoms.

PULMONARY LESIONS IN INFLUENZA.

KAHLER (*La Sem. Méd.*, 1890, 80) divides into three classes the severe pulmonary alterations which he has observed in influenza. The first consists in abscesses or purulent pleurisy, consecutive or independent. All these cases terminated rapidly in death on the third or fourth days. As abscess and primary purulent pleurisy are of so rare occurrence, it is necessary to suppose some specific cause in these cases; and the appearance of these conditions on the day of the appearance of the influenza, or upon the day succeeding it, proves that we have to do with the action of a virus still unknown, and not with a secondary infection.

The second category consists in what the author designates lobular pneumomia, or mild pleuro-pneumonia. In these cases the influenza, accompanied by bronchitis, follows its ordinary course, but the patient does not convalesce; the pulse and respiration remain frequent, fever persists, and little by little the symptoms of pulmonary infiltration develop, increase, and are only followed by a very slow recovery. These pneumonias are often accompanied by a serous or sero-hemorrhagic pleurisy. The pneumonias observed during the epidemic differed from ordinary pneumonia, in the absence of characteristic sputum, in the defervescence by lysis, and in the character of the fever, which is not so continuous as in ordinary pneumonia.

The third category of lesions is characterized by grave bronchitis, which can often terminate in death, and which is often accompanied by catarrhal pneumonia.

PATHOLOGY OF INFLUENZA.

LEYDEN (*Berliner klin. Wochenschr.*, 1890, No. 10), in an address before the Berlin Clinical Society, reported the case of a woman who had influenza in December and who never seemed to recover from it. Finally, early in January she suffered from persistent vomiting for eight days, and passed cloudy urine and in small amount, and œdema developed. Examination showed the urine to be hemorrhagic and very highly albuminous, as in acute nephritis; and though her condition improved, she died about the last of January from exhaustion. At the autopsy the kidneys were found in the first stages of Bright's disease, and microscopically exhibited what Klebs has described as glomerulo-nephritis, the most frequent form after acute infectious diseases. He says he has read of just such a case of fatal nephritis after influenza. In the present epidemic he has seen three cases of nephritis, two of them combined with pneumonia and ending fatally, but no autopsy could be obtained in these. The case now described is peculiar in that the nephritis was directly sequent to uncomplicated influenza—an additional proof that influenza, even without complications, is to be considered an infectious disease. Moreover other complications and sequelæ, as disturbances of the heart, sudden collapse, and paralyses and muscular atrophies, have been observed after influenza as after other infectious diseases.

The author is inclined to the view that the disorder is due to a miasmatic infection, but he does not consider the question yet settled.

As regards influenza pneumonia, Leyden calls attention to this as the commonest and most dangerous complication, and to the fact that it exhibits marked peculiarities. Every epidemic of influenza has been accompanied by cases of pneumonia in large numbers. He does not believe that it is merely an accidental complication. Its peculiarities consist in that it seldom begins with chill or is accompanied by severe inflammatory symptoms. Further, the local process is seldom typical—three to four days elapsing before crepitation can be heard in any locality, and that this then sometimes disappears by the next day and develops in another spot. Well-marked dulness is unusual. The sputum is seldom rusty, sometimes absent, and in some cases catarrhal and tinged with blood. In other cases he has observed an abundant serous sputum. Then, too, genuine crises are seldom witnessed; the course of the disease is milder, and it is not so fatal as ordinary pneumonia, except in elderly or debilitated persons. Finally, he remarks the peculiarity that grippe-pneumonia attacks all classes—young and old, well and those already sick with other diseases.

Some of the cases of pneumonia under his observation were undoubtedly genuine pneumonia; others clearly varied greatly in symptoms, which raises the question as to whether different forms of pneumonia may occur with influenza.

Only two autopsies were made on cases dying with pneumonia in his clinic. The course of the disease had not been at all typical, and had had the character of grippal pneumonia. The post-mortem examination showed the presence of a pulmonary infiltration, which, though called "fibrinous pneumonia," lacked firmness, and the cut section was smooth instead of being granular. Microscopical examination showed no solid hepatization, but an incomplete filling of the alveoli with large multinuclear cells.

A series of bacteriological studies was made in the author's clinic upon the various sorts of sputum seen in influenza-pneumonia. Diplococci or these with streptococci were found, or, still oftener, diplococci with staphylococci. A second series of studies was made upon pleural exudate occurring in influenza, and this revealed streptococci, diplococci, and staphylococci.

Still a third series was made upon the two fatal cases of pneumonia referred to, and upon another case of pneumonia with meningitis. It was found that three sorts of microbes were present in these pneumonias, viz., diplococci—*i. e.*, Fränkel's pneumococci—streptococci, and staphylococci. This agrees for the most part with the observations of other investigators on grippal pneumonia. He concludes that the pneumonia of influenza is of several varieties, viz., the genuine form due to diplococci, and varying somewhat though not greatly from the typical, and mixed forms. In two other cases under the author's observation there was a pneumonia caused exclusively by streptococci, since the purulent pleural exudate which accompanied it contained only streptococci.

Leyden takes the ground that in the presence of influenza these different microbes penetrate into the body and there produce diseases analogous to those which they would produce without the influence of influenza. This gives no information regarding the cause of the influenza itself—whether a specific microbe or a miasma; and the author expresses himself as inclining to the latter.

THE ANTISEPTIC AFTER-TREATMENT OF VACCINATION.

JOHN BARK (*British Medical Journal*, 1890, i. 233), after a yearly experience in the last five years of over 2000 primary vaccinations, says that the accident most to be dreaded is the occasional occurrence of erysipelas, which may, of course, end fatally by septic absorption. He has noticed that all the attacks of blood-poisoning following vaccination have been in children in whom cleanliness was almost entirely neglected, or who were living in houses where the hygienic surroundings were bad; and he entertains no doubt that all the attacks of blood-poisoning were due to one or other of these causes, and that they were not the direct result of the operation.

Having a profound conviction of the value of antisepsis in surgery, he has for over a year employed an antiseptic pad for the protection of the vaccinated arms of children, applying it after the opening of the vesicles on the eighth day, before which date, in his experience, septic absorption does not take place.

The pad is composed either of boracic or eucalyptus absorbent cotton, or, better, of perchloride wood-wool wadding, and covered at the back and edges with antiseptic gauze. Two straps of soft half-inch tape fasten the pad to the upper arm, and a similar tape passing from the sternum to the opposite axilla prevents the pad from slipping down.

The dressing should not be disturbed for at least six days. The advantages claimed by the writer for the form of protection are: 1. It protects the arm from external violence. 2. It absorbs all discharges. 3. It reduces the risk of septic absorption. 4. It cannot be used a second time like ordinary shields, which are often the dangerously employed again and again. 5. It is extremely cheap.

THOMSEN'S DISEASE.

HALE WHITE (*British Medical Journal*, 1890, i. 241) exhibited at the Medical Society of London a case of Thomsen's disease in a boy of nineteen years, whose father, one sister, and two cousins were also affected with it. The disease began when he was a child. There was the characteristic stiffness on voluntary movement throughout the body. The fingers when flexed could not again be extended for eight seconds. The second time the duration of the immobility after flexion was four seconds, and it grew gradually less after each effort. Nearly all the voluntary movements of the body were implicated, though the muscles of the eyes and larynx and the interossei were uninvolved, as were the acts of defecation, micturition, and respiration.

On mechanical stimulation of either motor nerves or muscles, the latter contracted more readily than normal, but the contraction and relaxation were slower than normal. The electrical reactions generally were normal, but ACC. was, in some muscles, easier to obtain than KCC.

GEORGE HERSCHELL showed two brothers, aged twenty-eight and eighteen years, suffering from myotonia congenita. They belonged to a family of ten children, five of whom were affected similarly. The first movement of a muscle after long repose was exaggerated, and a condition of tense rigidity remained for nearly a minute after the voluntary stimulus was withdrawn. Muscular rigidity was produced by any sudden movement, particularly in climbing and walking upstairs. The arms and legs were chiefly affected, the jaws very slightly and occasionally, if at all. The knee-jerk was normal after the stiffness caused by the first movement of the leg had passed off. The affection commenced in childhood.

DELAYED RESOLUTION IN PNEUMONIA.

CIMBALI (*Münch. med. Wochenschr.*, February 18, 1890) concludes, at the close of an address on this subject, that delayed resolution in pneumonia occurs in debilitated individuals (particularly in malarial cachexia), and almost always in severe cases, as a result of cardiac weakness. After the crisis, the physical signs remain unchanged, the sputum pneumonic, and often there are at times evening rises of temperature.

In Cimbali's cases resolution was always complete by four to six weeks after the crisis, and there was no instance of relapse. Resolution in all the cases proceeded parallel with but in advance of the improvement in the general condition of the patient, and the therapy consisted, therefore, chiefly in increasing the resisting power of the organism. Finally, the author points out that a pneumonic lung in which resolution has been delayed offers a favorable nidus for the growth of tuberole bacilli, on account of which fact the patients in this stage are to be guarded with special care against the possibility of tubercular infection.

OBSERVATIONS ON THE TREATMENT OF EMPYEMA.

PEL (*Zeitschrift f. klin. Med.*, 1890, xvii. 199), after referring to the fact that the proper method of treating empyema appears to be by no means settled, takes up the discussion of this subject. In the last eight years he has had under observation about 80 cases in his clinic and about 20 cases in private practice; they have been treated in different ways, according to the methods most in vogue at different periods, although for the last three years he has followed a more definite plan which he has found to give the best results.

Regard was had to—1. The age of the patient. 2. The cause of the disease. 3. The extent. 4. The nature of the exudate. 5. The period of the disease. 6. The general condition of the patient.

The different methods of treatment employed were:

1. The simple puncture, performed once or often.
2. Aspiration followed by washing out of the pleural cavity.
3. Permanent aspiration (method of Bülau).
4. Radical incision.
5. Resection of one or several ribs with incision of the pleura.
6. Expectant treatment.

He discusses these various methods of treatment, as exemplified by a number of cases whose details he reports, and draws conclusions which may be summarized as follows:

1. The pathological indication of empyema is different in different cases; depending upon (*a*) the etiology, (*b*) the extent of the exudation, (*c*) the character of the pus, (*d*) the duration of the disease, (*e*) the age of the patient, and (*f*) the general condition and the constitution of the patient.

2. Treatment is to be determined by a consideration of all these factors; and must be conducted strictly according to individual conditions.

3. As far as the idea of a general method of treatment can be entertained, the radical incision, sometimes combined with resection of the ribs, is by far the efficient method, and is the only one which assures definite results. In very recent cases, however, the radical operation must not be too quickly undertaken, not only on account of the danger of infecting the pleura from without, but on account of the possibility of a recrudescence of the pleural inflammation. In practice such cases would be seldom encountered.

4. Simple aspiration, performed once or several times, is only exceptionally followed by good results, even in empyema in children. It is indicated only in small, circumscribed, and especially meta-pneumonic empyema, where no single symptom demands immediate and total removal of the pus, and yet the general condition of the patient does not permit of expectant treatment. In the case of large collections of pus aspiration is only allowed under stress of circumstances, or in cases in which only palliation is intended.

5. Aspiration followed by washing out of the pleural cavity is not to be recommended.

6. Permanent aspiration (Bülau's method) is best suited to recent cases with thin fluid, sero-purulent contents. In other cases less hope can be entertained of a favorable result.

7. An expectant procedure (*i. e.*, suitable general treatment without operation) is adapted to those cases in which there is present a small circumscribed empyema without such symptoms as fever, general weakness, rapid pulse, and disturbed digestion, demanding the operative removal of the pus. Especially is this true if the process has been preceded by a croupous inflammation of the lungs. To proceed to incision in these cases as soon as pus has been discovered, is to overlook the many natural recoveries which take place under these circumstances. If, under proper treatment, the empyema is not absorbed or discharged by a bronchus, and if the general condition of the patient does not justify further expectant treatment, simple aspiration should be first tried, and then incision, if the other be unsucessful.

The Formation of Hospitals for Consumptives.

In a discussion in the Society for Internal Medicine, on the establishment of hospitals for consumptives, **Cornet** (*La Sem. Méd.*, 1890, 78) said that it was now generally admitted that a patient with phthisis could communicate the disease to the members of his family, but that the importance and extent of this danger were still discussed. He believes that the disease is communicated in hospitals much more frequently than is ordinarily supposed; the great slowness with which the infection develops causing the fact of the contagion to be overlooked. It has been claimed that physicians should become oftener affected by it than they do, were the disease so contagious. That they are not is due to the fact that at the time of their visits to the sick the bacilli, which have been stirred up by the cleaning of the room, have settled on the walls, furniture, etc., and the danger is at this time, therefore, not so great. Besides, statistics do show that a large number of those in attendance upon phthisical patients in hospitals contract the disease; for, in spite of all that has been done by the authorities, prophylactic measures are in many hospitals totally disregarded. The author, therefore, strongly recommends the construction of special hospitals for this disease.

Gerhardt took the same ground as to the need of special hospitals for this disease, arguing for the contagiousness of phthisis from the point of view of his experience; while **Fürbringer** and some others argued against the establishment of such institutions.

Retardation of the Heart-beat—Brachycardia.

Riegel (*Zeitsch. f. klin. Med.*, 1890, xvii. 221–291) publishes a most elaborate and instructive article upon retardation of the pulse, of which we can give but a brief abstract. He has himself for a long time paid special attention to the subject, and now combines his experience with an exhaustive review of the literature in the study of the occurrence, frequency, mode of origin, and indications of brachycardia.

The title "retardation of the pulse" is not quite accurate. Cases frequently occur in which the pulse does not indicate as many contractions of the heart as palpation or auscultation shows actually takes place. The heart-beats may sometimes be double or even treble the number of pulse-waves. Cases have frequently been reported as instances of brachycardia in which this condition was present. Pulsus bigeminus, in which the second beat is excessively weak, has been mistaken for retardation of the pulse.

The author excludes all such cases from the category of brachycardia, and claims that it is not the number of pulse-waves but that of heart-contractions which is the criterion.

The normal number of heart-beats per minute has been variously stated. He agrees with the majority of writers in considering a pulse of 60 or under as indicating brachycardia, and excludes from consideration all cases over that, or in which the heart's action does not correspond with that of the pulse. He has examined in the last seven years

4484 men and 3083 women = total 7567
and found 710 " " 331 " = " 1041

instances of brachycardia. The preponderance of males he considers of no import.

He divides brachycardia into:

I. That occurring under physiological conditions.

II. That occurring under pathological conditions, although it is often difficult to determine to which class a case is to be assigned.

I. Physiological brachycardia.

1. *Puerperal brachycardia.* It is not uncommon to see the pulse beating from 44 to 60 per minute in the healthy puerperal state, and it has been reduced even as low as 34. The duration of the retardation is from some hours to ten or twelve days, or even longer. The nature of the labor exerts no influence on it. It is seen after premature labor as well as that at term; the presence of the slightest pathological condition during the puerperium hinders its development. The most varying explanations have been given of its cause. The principal of these are: (*a*) increase of the arterial tension and of the blood pressure; (*b*) absorption of the fat of the degenerative uterus; (*c*) disturbances of innervation; (*d*) mental and bodily rest; (*e*) diminution of the work thrown on the heart by the removal of the demands made by the fœtus; (*f*) increase of the vital capacity of the lungs. Riegel discusses these theories very briefly, and quotes from the authors who support them.

2. *Brachycardia from hunger.* It has been shown by the experience of Lissauer on fasting Hebrews that the frequency of the pulse is less on fast days, though showing variations.

3. *Brachycardia depending on individual peculiarities.* Grob described 6 cases of this sort out of 3578 individuals observed. Riegel entertains a doubt about some of them, and emphasizes the importance of determining that the slowness of the pulse is more or less constant, and not due to the presence of some pathological condition. He cites a few other cases from medical literature, but believes that many of them cannot properly be included in this category, and holds that the retardation of pulse from this cause is rare.

II. Pathological brachycardia. All of the author's 1041 cases are included in three groups. He combines in it the "idiopathic" and "symptomatic" forms of Grob.

1. *Brachycardia in convalescence from acute febrile diseases.* 282 cases of this sort were observed, occurring in pneumonia; recurrent, typhoid, and intermittent fever; articular rheumatism; febricula and influenza; diphtheritis, scarlatina, morbilli; variola; varicella, and erysipelas. A tabular arrangement is given showing the number of instances of each. The condition followed in about one-seventh of the total number of cases of fever. It is especially apt to occur in the fall of temperature if antipyretics or digitalis have been employed. He quotes extensively the opinions of different writers and recorded instances of slowing of pulse after fevers. In his experience it is especially apt to occur in young and strong individuals, and in cases which have run an uncomplicated course. The retardation may accompany the crisis, or occur more gradually and increasingly. It lasts a very variable time; the general conditions do not seem to be affected by it as a rule, though cases have been reported in which severe symptoms attended its development. He discusses the proposed explanations of its cause, adopting as the most rational that of Traube, that it is an evidence of exhaustion; the resistance which the heart

offers to nervous impulses being increased through exhaustion, and consequently the organ responding only slowly after the influence of the fever is removed.

2. *Brachycardia in diseases of the digestive organs.* The largest number of cases observed by Riegel were of this class, viz., 379, divided among very various affections; those in which it occurred oftenest being ulcus and carcinoma ventriculi, simple gastrectasia, gastric catarrh, chronic dyspepsia, catarrhal icterus and diseases of the liver, and diseases of the oral cavity and throat. He has been able to find but few cases reported in the literature. The degree of retardation noticed was often great, the pulse beating 40 to 45, and in one case of dyspepsia 34. The brachycardia usually disappears with the *disease*, but not universally with the acute *symptoms*. The cause of the retardation is easily explainable in many cases on the theory of reflex inhibitory influence through the vagus, in others it is not clear. Icterus was the cause in a number of cases; that icterus produces this result has long been known, and is now generally admitted to be due to the influence of the bile acids upon the cardiac ganglia. Most of the cases following diseases of the mouth and throat can more properly be relegated to the preceding class.

3. *Brachycardia in diseases of the respiratory organs.* 87 cases are included here (not including pneumonia, referred to the first group). Little is to be found in medical literature on the subject. The greater number of cases of this class seen by Riegel occurred in emphysema. In this disease the cause was probably the increased pressure on the vagi in the overfilled lungs, as well as the action of blood containing an abnormal amount of carbonic dioxide. In other conditions the cause was often not easily discoverable; though in some the retardation might properly have been referred to the first class as convalescence-brachycardia.

4. *Brachycardia in diseases of the circulation.* Only a small number, 47 cases, of this kind were seen, and the ratio to the total number of circulatory diseases observed was also small. All cases of irregularity of the heart, etc., and of the retarding action of drugs, were excluded. The condition was relatively most common in diseases of the myocardium, especially fatty degeneration. Riegel reviews carefully many of the expressed views and reported cases of other writers, illustrating brachycardia in fatty degeneration of the heart, sclerosis and thrombosis of the coronary arteries, aortic stenosis, diseases of the aorta, cardiac over-strain, angina pectoris, mitral stenosis, diseases of the pericardium, and congenital heart-lesions. He concludes from these, with a study of his own cases, that although brachycardia is quite frequently seen in fatty degeneration and in sclerosis of the coronary arteries, as well as in certain valvular lesions, it is in no sense a constant and pathognomonic symptom of any certain diseases of the heart. He regards it as of rare occurrence in heart disease. Its cause is doubtless different in different cases, but it only occurs in a weak and insufficiently nourished heart, whatever the actual circulatory disease may be. Thus a certain process may, or may not, produce brachycardia, according as the heart is or is not weak. A true neurasthenia of the heart has also been described as a cause of brachycardia.

5. *Brachycardia in diseases of the urinary organs.* Riegel has observed 64 instances of this, divided among cystitis and acute, chronic, and non-

scarlatinal nephritis. He quotes the little which is to be found in medical literature regarding it. He has for years observed its occurrence in nephritis, and considers it to be always associated with diminished excretion of urine and an increase in arterial tension. This and the retardation are due undoubtedly to uræmia. Consequently brachycardia is much more common in acute than in chronic nephritis. In diseases of the bladder it is probably produced by some reflex action, as by an irritation of the sensory nerves.

6. *Brachycardia resulting from intoxications.* In addition to the uræmic, Riegel has observed 3 cases resulting from poisoning by lead and 5 from that by alcohol. Instances of both these conditions have been reported by others, and are quoted by him. The brachycardia after digitalis and similar drugs is to be classed here, as is that from the use of strong coffee or tobacco.

7. *Brachycardia in diseases of the blood, and in general disturbances of nutrition.* 31 cases observed by him are included in this group. It has been described in diabetes, though it is uncertain how far the disease was etiologically connected with the retardation. Diabetes insipidus and brachycardia may be associated, both being due presumably to irritation of the vagus. Anæmia and chlorosis too frequently are accompanied by brachycardia to allow of the supposition that the association is merely accidental.

8. *Brachycardia in diseases of the nervous system.* Riegel has himself observed 93 cases, and numerous instances are reported in the literature. Its occurrence in diseases of the brain has long been known, as in concussion, apoplexy, meningitis, second stage of epilepsy, cerebral tumors, cerebral anæmia, anything causing an irritation of the vagus centre, etc. As regards disease of the spinal cord, it has long been understood that injuries of the cervical cord, as in fracture of the vertebræ, may produce retardation of the pulse. The association of retardation of the pulse with epilepsy or other spasm has also been noted. He quotes at length many instances of the connection of retardation of the pulse with the condition of the central nervous system, and discusses the nature of the connection.

In certain psychoses brachycardia has been observed, as in mania, melancholia, general paresis. It has been seen in mental depression. Numerous cases are reported and here referred to in which brachycardia was the result of direct irritation of the vagus, abscess, or pressure.

The author's own cases were divided among quite a variety of nervous diseases. Quite a number were instances of neuralgia, and the retardation is to be accounted for by the irritation of sensory nerves. There were beside 10 cases of neurasthenia or hysteria, with slowing of the pulse, and 8 cases of epilepsy.

9. *Brachycardia in other affections.* The author has observed 17 instances of pulse-retardation in exhaustion, 1 in sunstroke, 12 in diseases of the skin, 17 in painful affections of the muscles, and others in diseases of the sexual system.

In summing up the results of his studies, he says that brachycardia is much the most frequent in convalescence from acute fevers; then in diseases of the digestive system, and then in those of the circulatory, respiratory, and nervous systems. The cause and indication are very different in different cases. After acute fever it is, to a certain extent, a normal occurrence, and in the puerperium is purely physiological, while in diseases of the heart and brain it is an ominous symptom. As to its etiology, it is sometimes a reflex phenomenon from different peripheral paths, sometimes a direct cerebral focal symptom. Its cause is sometimes a diminished excitability or a paralysis of the cardiac ganglia, the accelerator nerves, or vaso-motor system; sometimes an irritation of the vagus; sometimes a weakness or degeneration of the heart muscle; sometimes direct disorders of the coronary arteries.

Only by observation of all the other symptoms can the diagnostic and prognostic indications of brachycardia be determined in any given case.

A bibliography containing 161 references closes this very valuable paper.

PERU BALSAM AND NEPHRITIS.

BRAEUTIGAM and NOWACK (*Centralblatt f. klin. Med.*, 1890, No. 7) refer to the well-known danger of nephritis following the use of such balsams as copaiba and styrax, but say that only two modern authors, Litten and Vamossy, have recorded cases in which Peru balsam produced such a condition. The first reported the case of a painter suffering from lead colic, and from scabies, who passed blood, epithelium, and casts in his urine after each inunction with the medicine. In the four cases of the second writer, irritation of the kidney, with albuminuria and dark-colored urine, followed the employment of Peru-balsam gauze.

In order to settle the point to their own satisfaction, the authors examined systematically the action of the balsam on the kidneys in twenty-two cases of different diseases, testing daily in each the color, odor, specific gravity, quantity, reaction, presence of albumin, and microscopical appearance of the urine. They indicate the results in tabular form. The balsam was given by the mouth, subcutaneously, and by hypodermic injection. The largest dose employed was 170 grains in one day. That the balsam was actually absorbed was proved by the strongly acid reaction of the urine, due probably to an increased amount of hippuric acid. Their results contradict entirely the statements of Nothnagel and Rossbach, that the drug given internally in large doses produces gastro-intestinal catarrh and acts as an irritant to all mucous membranes. In no instance did they observe any disturbance of the stomach or bowels, nor any brown coloration of the urine, albuminuria, nor abnormality in the amount of urine secreted.

It is clear that Peru balsam is not to be compared with copaiba and styrax in its action on mucous membranes and on the kidneys. This is probably due to the absence in it of ethereal oils. It is possible that the renal irritation witnessed in Vamossy's and Litten's cases was due to adulteration with ethereal oil. It is, therefore, very important to secure the purity of the preparation.